

Appl. No. 09/994,443
Amdt. dated 05/19/2005
Reply to the Office Action of 03/03/2005

REMARKS

Reexamination and reconsideration of this application is requested. After this response without amendment, Claims 1-22 remain pending in this application. Claim 6 was amended to correct a minor typo. No new matter was added. Applicants submit that the present response places the application in condition for allowance. Entry of the present response with amendment is therefore respectfully requested.

Allowable Subject Matter

(2) The Applicants acknowledge, and wish to thank the Examiner for, the allowance of Claims 7, 14, and 22.

Claim Rejections under 35 U.S.C. §103

The Examiner rejected Claims 1-6, 8-13 and 15-21 under 35 U.S.C. 103(a) as being unpatentable over Goldstein et al. (U.S. Patent No. 6,247,105) in view of Yarborough (U.S. Patent No. 6,226,725).

Applicants have amended dependent Claim 6 only to correct a minor typo, and not for patentability or to further limit the claim in view of any reference. No new matter was added.

In this rejection, the Examiner cites to 35 U.S.C. §103. The Statute expressly requires that obviousness or non-obviousness be determined for the claimed subject matter "as a whole," and the key to proper determination of the differences between the prior art and the present invention is giving full recognition to the invention "as a whole." The Goldstein reference taken alone or in view of Yarborough simply does not teach, anticipate, or suggest, the patentably distinct limitations of:

establishing a base non-pageable pinned kernel memory block;

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accepting a request for a non-pageable pinned kernel memory buffer, wherein the request comprises a specification of a buffer size for the non-pageable pinned kernel memory buffer;

determining if the base non-pageable pinned kernel memory block contains sufficient non-pageable pinned kernel memory for the non-pageable pinned kernel memory buffer; and

allocating, in response to a determination that there is insufficient non-pageable pinned kernel memory within the base non-pageable pinned kernel memory block, an additional non-pageable pinned kernel memory block that is at least as large as the buffer size and wherein the additional non-pageable pinned kernel memory block is not required to form a contiguous non-pageable pinned kernel memory section with the base non-pageable pinned kernel memory block.

The limitations taken "as a whole" in independent Claim 1, and similarly in independent Claims 8 and 16, are not present in Goldstein taken alone or in view of Yarborough, as can be seen from the following remarks.

The Examiner concluded that Goldstein teaches the present invention as recited for Claims 1, 8, and 16, and cited several paragraphs in Goldstein in support thereof. Applicants respectfully disagree with the Examiner's conclusion. In particular, the Examiner concluded, among other things, that Goldstein teaches "[pinned kernel memory]" but not "non-pageable pinned kernel memory".

The Examiner relied upon col. 4, lines 38-42 and 46-51 and col. 5, lines 12-17 of Goldstein, to reject the above elements of Claims 1, 8, and 16. However, the Examiner's reliance upon the citations of Goldstein is misplaced for the following reasons. Col. 4, lines 38-42, merely discloses that the operating system kernel reserves the memory area occupied by the arena for exclusive use of the memory space allocator and prevents other processes from using or modifying this memory area.

Nowhere does Goldstein teach, anticipate, or even suggest that the memory is pinned memory. Pinned memory, as stated on page 3, lines 20-21 of the Specification as

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originally filed, is memory that is configured to prevent the paging out of data stored in that portion of memory. Applicants respectfully suggest the Examiner is assuming that because the kernel in Goldstein is reserving memory, that any memory reserved by the kernel is pinned memory. However, by the kernel reserving memory and protecting that memory from being accessed or utilized by certain processes does not make the reserved memory pinned. For memory to be pinned memory, as understood by those of ordinary skill in the art, the memory needs to be non-pageable. See, for example, the cited Yarborough reference, column 1, line 59, to column 2, line 11, describing conventional pinning memory applications. More specifically, Yarborough states plainly that when memory is pinned it is not paged. See column 1, lines 63-64. This is the plain understanding by those of ordinary skill in the art, in that paging memory applications and pinned memory applications are mutually exclusive.

In fact, Goldstein **explicitly** teaches that the memory reserved by the kernel is pageable. For example, Goldstein teaches in col. 5, lines 45-52:

When a memory page is instantiated, it is preferably mapped as a page in the virtual memory system with backup store capability **to allow the memory page to be swapped into or out of the system memory by the system**. When a memory page is swapped out of the system memory, it is stored on a mass storage device. When a memory page is swapped into the system memory, it is stored in the system random access memory.

Goldstein also teaches in col. 10, lines 55-65:

Preferably, step 402 identified a single memory page that can be used to satisfy the memory request. Allocating memory within a page boundary reduces the potential for paging (i.e., swapping memory pages into and out of memory). **However, it may be necessary to allocate memory across page boundaries**. If all of the buckets on the selected memory page have already been allocated, the method returns to step 402, where the memory page having an optimum (e.g., highest) number of free buckets is

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identified among the remaining memory pages and selected to be used for memory allocation.

The Examiner specifically stated on page 8 of the Office Action, that the secondary reference, Yarborough, teaches that "when kernel memory is pinned, the memory will not be swapped into and out of the disk, thus rendering the kernel memory space as non-pageable". Because Goldstein teaches that the memory reserved by the kernel **can** be swapped in and out of memory (paged), the memory in Goldstein is not pinned. Therefore, Goldstein does not teach, anticipate, or even suggest, "non-pageable pinned kernel memory" as recited for Claims 1, 8, and 16. Accordingly, Claims 1, 8, and 16 distinguish over Goldstein for at least this reason.

The Examiner also stated on page 8 of the Office Action that "Goldstein et al. **does not** recite preventing the paging out of kernel pages to disk, meaning that Goldstein et al. **does not** teach a non-pageable kernel memory system." The Examiner is correct in stating that Goldstein does not teach that the memory is non-pageable. However, as stated above, because Goldstein **does not** teach that the memory is non-pageable and actually teaches that the memory is **pageable**, the memory in Goldstein is therefore not pinned, as recited for the presently claimed invention. Pinned memory, by definition, is not pageable, unlike the memory taught by Goldstein. Therefore Claims 1, 8, and 16, distinguish over Goldstein for at least this reason.

However, the Examiner concluded that Yarborough teaches "non-pageable kernel memory" and relied upon col. 1, lines 27-32, 55-66 and col. 2, lines 2-4, in rejecting Claims 1, 8, and 16. Col. 1, lines 27-32, 55-66 and col. 2, lines 2-4, merely disclose that pinning memory dedicates memory, thereby preventing the rest of the system from using this portion of the main memory and when memory is pinned, it is not paged.

Nowhere does Yarborough teach, anticipate, or even suggest:

1. establishing a base non-pageable pinned kernel memory block;

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2. accepting a request for a non-pageable pinned kernel memory buffer, wherein the request comprises a specification of a buffer size for the non-pageable pinned kernel memory buffer;
3. determining if the base non-pageable pinned kernel memory block contains sufficient non-pageable pinned kernel memory for the non-pageable pinned kernel memory buffer; and
4. allocating, in response to a determination that there is insufficient non-pageable pinned kernel memory within the base non-pageable pinned kernel memory block, an additional non-pageable pinned kernel memory block that is at least as large as the buffer size and wherein the additional non-pageable pinned kernel memory block is not required to form a contiguous non-pageable pinned kernel memory section with the base non-pageable pinned kernel memory block.

as recited for Claim 1, and similarly for Claims 8 and 16. Accordingly, Claim 1, and similarly Claims 8 and 16, distinguish over Yarborough for at least this reason.

The Examiner goes on to combine Goldstein with Yarborough stating that “[i]t would have been obvious to one of ordinary skill in the art having the teachings of Goldstein et al. and Yarborough before him at the time the invention was made to modify the kernel memory pinning system of Goldstein et al. to include the non-paging system of Yarborough, because then performance degradation due to page faulting can be avoided, as taught by Yarborough [col. 1, lines 63-65]”.

However, the Federal Circuit has consistently held that when a §103 rejection is based upon a modification of a reference that destroys the intent, purpose or function of the invention disclosed in the reference, such a proposed modification is not proper and the *prima facie* case of obviousness can not be properly made. See *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Here the intent, purpose, and function of

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Goldstein taken alone or in view of Yarborough is reserving memory space that can be paged. Yarborough, on the other hand discloses reserving memory that is pinned and therefore cannot be paged. Combining the pageable memory system of Goldstein with the pinned non-pageable memory system of Yarborough would destroy the intent, purpose, and/or function of both references. Therefore, such a proposed modification of Goldstein and Yarborough is not proper and the prima facie case of obviousness can not be properly made.

Furthermore, when there is no suggestion or teaching in the prior art for “establishing a base non-pageable pinned kernel memory block; accepting a request for a non-pageable pinned kernel memory buffer, wherein the request comprises a specification of a buffer size for the non-pageable pinned kernel memory buffer; determining if the base non-pageable pinned kernel memory block contains sufficient non-pageable pinned kernel memory for the non-pageable pinned kernel memory buffer; and allocating, in response to a determination that there is insufficient non-pageable pinned kernel memory within the base non-pageable pinned kernel memory block, an additional non-pageable pinned kernel memory block that is at least as large as the buffer size and wherein the additional non-pageable pinned kernel memory block is not required to form a contiguous non-pageable pinned kernel memory section with the base non-pageable pinned kernel memory block” the suggestion can not come from the Applicants' own specification. The suggestion should come from the references themselves. The Federal Circuit has repeatedly warned against using the Applicants' disclosure as a blueprint to reconstruct the claimed invention out of isolated teachings of the prior art. See MPEP §2143 and Grain Processing Corp. v. American Maize-Products, 840 F.2d 902, 907, 5 USPQ2d 1788 1792 (Fed. Cir. 1988) and In re Fitch, 972 F.2d 160, 12 USPQ2d 1780, 1783-84 (Fed. Cir. 1992). As discussed above, Goldstein is teaching memory reserved by the kernel that is pageable. Additionally, nowhere in Goldstein is pinned memory even mentioned. Yarborough, on the other hand, teaches pinned memory. Therefore, neither Goldstein nor Yarborough teaches or suggests combining the pageable non-pinned memory of Goldstein with the non-pageable pinned memory of

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Yarborough.

Moreover, the Federal Circuit stated in McGinley v. Franklin Sports, Inc., (Fed Cir 2001) if references taken in combination would produce a "seemingly inoperative device," we have held that such references teach away from the combination and thus cannot serve as predicates for a prima facie case of obviousness. In re Spinnoble, 405 F.2d 578, 587, 160 USPQ 237, 244 (CCPA 1969) (references teach away from combination if combination produces seemingly inoperative device); see also In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984) (inoperable modification teaches away). Here, because Goldstein is teaching non-pinned pageable memory and Yarborough is teaching pinned (non-pageable) memory, the combination of Goldstein and Yarborough would produce a seemingly inoperative device. The memory types in Goldstein and Yarborough teach away from each other and therefore, the combination of Goldstein and Yarborough is improper.

Claims 2-6, 9-13, and 15-21 depend from Claims 1, 8, and 16 respectively and since dependent claims recite all of the limitations of the independent claim, it is believed that, therefore, Claims 2-6, 9-13, and 15-21 are distinguishable from any single reference or any arguable combination of Goldstein and Yarborough, as has been already discussed above with respect to Claims 1, 8, and 16. Additionally, please note that these dependent claims recite further novel features of the claimed invention which are not taught or suggested by either cited reference or a combination of the two references.

Accordingly, in view of the amendments and remarks above, since neither Goldstein, Yarborough, nor any arguable combination thereof, teaches, anticipates, or suggests, the presently claimed invention as recited for Claims 1-22, Applicants believe that the rejection of Claims 1-22 under 35 U.S.C. 103(a) has been overcome. The Examiner should withdraw the rejection of these claims.

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Conclusion

The foregoing is submitted as full and complete response to the Official Action mailed March 3, 2005, and it is submitted that Claims 1-22 are in condition for allowance. Accordingly, reconsideration of the rejection is requested. Allowance of Claims 1-22 is earnestly solicited.

No amendment made was related to the statutory requirements of patentability unless expressly stated herein. No amendment made was for the purpose of narrowing the scope of any claim, unless Applicants have argued herein that such amendment was made to distinguish over a particular reference or combination of references.

Applicants acknowledge the continuing duty of candor and good faith to disclose information known to be material to the examination of this application. In accordance with 37 CFR § 1.56, all such information is dutifully made of record. The foreseeable equivalents of any territory surrendered by amendment are limited to the territory taught by the information of record. No other territory afforded by the doctrine of equivalents is knowingly surrendered and everything else is unforeseeable at the time of this amendment by the Applicants and the attorneys.

The present application, after entry of this amendment, comprises twenty-two (22) claims, including five (5) independent claims. Applicants have previously paid for twenty (22) claims including five (5) independent claims. Applicants, therefore, believe that an additional fee for claims amendment is currently not due.

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If the Examiner believes that there are any informalities that can be corrected by Examiner's amendment, or that in any way it would help expedite the prosecution of the patent application, a telephone call to the undersigned at (561) 989-9811 is respectfully solicited.


The Commissioner is hereby authorized to charge any fees that may be required or credit any overpayment to Deposit Account 50-1556.

In view of the preceding discussion, it is submitted that the claims are in condition for allowance. Reconsideration and re-examination is requested.

Respectfully submitted,

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